

WHAT IS CLAIMED IS:

1. A magnetic storage medium from and to which information is read and written by a magneto-resistive head, comprising:

a magnetic tape; and

a pair of reels for winding and rewinding the magnetic tape,

wherein the reels are provided with an antistatic treatment.

2. The magnetic storage medium according to Claim 1, wherein the reels comprise a conductive material as the antistatic treatment.

3. The magnetic storage medium according to Claim 2, wherein the reels are connected to the ground when the magnetic storage medium is loaded in a magnetic recording and playback device.

4. The magnetic storage medium according to Claim 2, wherein the conductive material has a surface-resistance ranging from $0 \text{ } \Omega/\text{inch}^2$ to $1 \times 10^{12} \text{ } \Omega/\text{inch}^2$.

5. The magnetic storage medium according to Claim 2,

wherein the conductive material comprises a metal.

6. The magnetic storage medium according to Claim 1, wherein the reels comprise antistatic films formed on the surfaces thereof as the antistatic treatment.

7. The magnetic storage medium according to Claim 6, wherein the antistatic films formed on the surfaces of the reels are connected to the ground when the magnetic storage medium is loaded in a magnetic recording and playback device.

8. The magnetic storage medium according to Claim 6, wherein the antistatic films have a surface-resistance ranging from $0 \Omega/\text{inch}^2$ to $1 \times 10^{12} \Omega/\text{inch}^2$.

9. The magnetic storage medium according to Claim 6, wherein the antistatic films are metal films.

10. A magnetic recording and playback device comprising:

a magneto-resistive head; and

a pair of reel supports for supporting a pair of reels of a magnetic storage medium loaded in the magnetic recording and playback device,

wherein the reel supports are provided with an

antistatic treatment.

11. The magnetic recording and playback device according to Claim 10, wherein at least one part of the reel supports comprises a conductive material as the antistatic treatment.

12. The magnetic recording and playback device according to Claim 11, wherein at least one part of the reel supports is connected to the ground.

13. The magnetic recording and playback device according to Claim 11, wherein the conductive material has a surface-resistance ranging from $0 \Omega/\text{inch}^2$ to $1 \times 10^{12} \Omega/\text{inch}^2$.

14. The magnetic recording and playback device according to Claim 11, wherein the conductive material comprises a metal.

15. The magnetic recording and playback device according to Claim 10, wherein at least one part of the reel supports comprises an antistatic film formed on the surface thereof as the antistatic treatment.

16. The magnetic recording and playback device

according to Claim 15, wherein the antistatic film formed on the surface of at least one part of the reel supports is connected to the ground.

17. The magnetic recording and playback device according to Claim 15, wherein the antistatic film has a surface-resistance ranging from $0 \Omega/\text{inch}^2$ to $1 \times 10^{12} \Omega/\text{inch}^2$.

18. The magnetic recording and playback device according to Claim 15, wherein the antistatic film is a metal film.

19. A head drum for reading and writing information from and to a magnetic tape, the head drum comprising:

a conductive rotating drum at the ground potential, the magnetic tape being wound in a helical manner around the rotating drum;

a metal base fixed inside the rotating drum and electrically connected to the rotating drum; and

a magnetic head fixed to the metal base, the magnetic head comprising:

a head substrate and a protection substrate, both having a resistance of $1 \times 10^{10} \Omega$ or less and electrically connected to the metal base;

a pair of outer insulating films disposed between

the head substrate and the protection substrate; and

a pair of magnetic shielding films disposed between the pair of outer insulating films;

a pair of inner insulating films disposed between the pair of magnetic shielding films; and

a magneto-resistive head element, disposed between the pair of inner insulating films, for reading stored signals by contacting the magnetic tape.

20. The head drum according to Claim 19, wherein the head substrate and the protection substrate comprise one of Al_2O_3 -TiC and MnZn ferrite.

21. The head drum according to Claim 19, wherein the head substrate and the protection substrate are electrically connected to the metal base with a conductive paste.

22. The head drum according to Claim 19, wherein either one of the head substrate and the protection substrate has a resistance of $1 \times 10^{10} \Omega$ or less and is electrically connected to the metal base.

23. A magnetic recording and playback device for recording and reading signals by using a magnetic tape, the magnetic recording and playback device comprising a head

drum, the head drum comprising:

a conductive rotating drum at the ground potential, the magnetic tape being wound in a helical manner around the rotating drum;

a metal base fixed inside the rotating drum and electrically connected to the rotating drum; and

a magnetic head fixed to the metal base, the magnetic head comprising:

a head substrate and a protection substrate, both having a resistance of $1 \times 10^{10} \Omega$ or less and electrically connected to the metal base;

a pair of outer insulating films disposed between the head substrate and the protection substrate; and

a pair of magnetic shielding films disposed between the pair of outer insulating films;

a pair of inner insulating films disposed between the pair of magnetic shielding films; and

a magneto-resistive head element, disposed between the pair of inner insulating films, for reading stored signals by contacting the magnetic tape.